

*Vedder (M. R.)*

AN

# IMPROVEMENT IN THE Obstetrical Forceps,

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MAUS R. VEDDER, M. D.,

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[Reprinted from The Medical Record, New York, March 23d, 1878.]

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In presenting to the notice of the profession my improved obstetrical forceps, it does not seem necessary that I should attempt to review the whole field of obstetrics, nor do I think it at all requisite to discuss, however briefly, the growth and development of the *armamentarium* of the obstetrician. I shall therefore confine myself to a few statements, which, I trust, will be sufficiently clear to enable my professional brethren to understand the improvement I have effected, as well as the course of reasoning in which it originated.

Of recent years the progress in medical science, particularly in the domain of surgery, has fully kept pace with the marvellous growth of science in general. As is well known, some of the really wonderful discoveries of modern times are but improvements on long existing forms, or the application of principles known from the remotest antiquity. Thales of Miletus described the phenomena and effects produced by the friction of amber, nearly twenty-five centuries before the same force was utilized by Morse

in the electric telegraph. Even the telephone—the most wonderful discovery of the present decade—was in successful operation (though in a very primitive form), among the savage inhabitants of an East Indian island, two hundred years before Professor Bell riveted the attention of the scientific world with his perfected instrument.

The common sewing-needle had been in use fully four thousand years before Howe conceived the idea of moving the eye towards the point; yet this simple change may be said to have revolutionized the art of sewing.

It has frequently occurred to me, during my practice, that the obstetrical forceps—even in its present perfection—was deficient in some principles, which, if discovered, would greatly increase its utility or convenience of employment.

Smellie, in his admirable “Treatise on Midwifery,” aptly likens the forceps to a pair of artificial hands; and, indeed, so far as the mere grasping, or rather clasping of the child’s head is concerned, the *simile* is a perfect one. It was Galen who said that man had hands given him because he was the wisest creature; but Anaxagoras had declared that the superiority of man was owing to his hand. With whichever we agree, it is indisputable that the superiority of the obstetrician is due in a large degree to the intelligent employment of the hands in practice.

As there are times, however, when the circumstances of the case limit the employment of the hands or call for other aids, recourse is had to the obstetrical forceps. These, as previously stated, are but artificial hands, and supplementary, as it were, to those of the obstetrician.

The forceps or pincers, it is well known, has been in use as a substitute for the finger and thumb from remote antiquity; and the obstetrical forceps as a substitute for the hands, since towards the close of the seventeenth century. While the former clasps or holds between the

ends of the blades placed in apposition, the latter, acting in the same manner, clasps or holds between the inner surface of the blades themselves—the motion being purely prehensile, as in the case of the thumb and finger. Instead, then, of likening the obstetrical forceps to the hands, would it not be nearer the truth to compare it with a very large, broad, and strong finger and thumb.

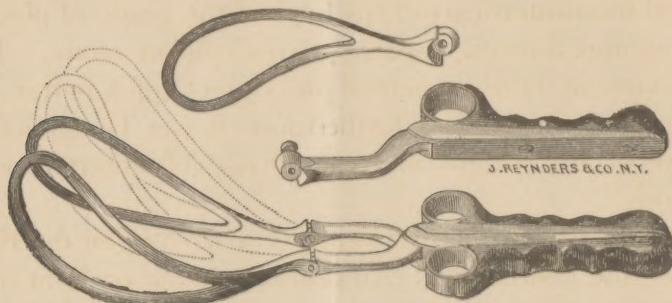
The task of reducing a mechanical appliance to the absolute perfection of the human hand must be considered impossible, as the most perfect instrument can neither be endowed with the sense of touch, nor placed *en rapport* with the human brain.

Such being the case, the present obstetrical forceps may be considered as very nearly perfect. Still, while representing the human hand, the instrument has not the capabilities of that organ; and this fact early impressing itself upon my mind, I have devoted much thought to the subject, hoping to discover wherein lay the deficiency.

Chancing one day to place my wrists in juxtaposition, and curving the palms and fingers of the hands to resemble the fenestrated blades, I discovered that the forceps in common use resembled a pair of hands with limited motion at the wrists. The only motion, in fact, of which it was capable, was prehension, while the human hand possessed also the power of pronation, supination, and, when placed in the position I have just described, of a limited motion upward and downward.

Pronation and supination are seemingly of no avail in the forceps; but this other wrist-motion, I saw at a glance, was precisely the principle lacking, and the one which I had for a long time sought to discover. The introduction of a hinge or joint, with limited action in the shank of each blade of the forceps, was all that was necessary to effect this improvement; and the instrument thus constructed, by approximating more nearly to the human

hand, could not fail to prove more serviceable in practice than those ordinarily employed.



Desirous of testing my theory on the subject, I laid my design before Messrs. John Reynders & Co. (New York city), who, in June, 1877, constructed to my order an obstetrical forceps of Simpson's pattern, which contained a hinge or joint of limited action in each shank, close to the fenestrated blade. This improved forceps I have tested on several occasions in actual practice, and have found it to possess in the utmost degree all the advantages I had hoped would follow its employment. My object, it should be understood, was not to overcome any particular, special, or single difficulty, but to supply to the existing forceps an element of usefulness which would be of avail in every case in which the instrument was employed.

Last September I showed my improved forceps to Dr. Fred. A. Castle, and, on the first of November following, to Professor Fordyce Barker. Both of these gentlemen expressed themselves as highly pleased with the improvement, and the latter commended it to Professor William T. Lusk, who presented it before the Obstetrical Society on the sixth of November, 1877.

The great desideratum in the obstetrical forceps is an improvement which will enable the instrument to adapt itself to the curves of the pelvic straits. This, I claim, is

perfectly accomplished by the improvement which I have effected—it being, in point of fact, the first which has advanced the obstetrical forceps beyond the grade of pincers or common forceps, capable of prehension alone. The improvement here presented also admits of a better adjustment of the blades; furthermore, it can be applied to forceps of any pattern, and cannot possibly interfere with traction.

It is in reality the bestowing of a wrist upon the rigid arm of the instrument. An ordinary hinge or joint over which the operator could exercise no control would be no more effective, as an adjunct to the forceps, than would be a nerveless wrist to the human hand. The peculiarity of the joint or hinge introduced in my improvement is that it is self-acting, and allows of the blades becoming movable, or fixed, at the will of the operator.

When traction is made, the self-adjusting mechanism of the joint fixes the handles in the position or at the angle in which they have been placed by the operator, thus preventing the fenestrated portion of the blades from moving either upward or downward. The instant traction ceases, the handles become free, and may be readjusted to suit the exigencies or requirements of the case, and without any more trouble than would attend a similar motion of the human wrist. The wood-cut here given does not, unfortunately, show the simple mechanism by which this fixation is effected; it is sufficiently explanatory, however, to enable any member of the profession to comprehend at a glance, both the nature of the improved forceps and the advantages which must result from its employment.

A decided objection to the employment of the forceps in common use, as applied to the head at or above the superior strait, is the impossibility of making traction in the line of that strait, the perineum opposing itself to the

direction of the handles of the instrument. This difficulty is entirely obviated by the joint in the shank, which enables the operator to flex the handles, and thus guard against injurious pressure upon the perineum. Furthermore, the instrument is at all times perfectly free to obey the manual intelligence which guides it—a matter of no slight importance.

Thus the maximum of traction may be exerted when necessary, and without danger to the soft parts.

Should there appear to be a limit to the amount of traction possible (which I have not yet discovered), the independent traction-rods recently devised by M. Tarnier, and designed by him to enable the operator to make powerful traction, might be added to the improved instrument here presented.

To guard against the possibility of the mucous membrane being caught in the joints, the edges are bevelled; should further protection be desired, the joints may be surrounded by a piece of flexible rubber tubing.

The improved forceps here presented and described controverts no accepted theory, disputes no established fact, and interferes with no existing improvement. It is merely the addition of another element of usefulness to a useful instrument; and as it follows out the mechanism of one of Nature's most perfect constructions—the human hand, it cannot be assailed as a chimera, nor condemned as the idle fancy of an over-wrought imagination.

Confident of its value, I unhesitatingly commit it to the profession, knowing from actual experience, that when tried, it will not disappoint the operator.

135 EAST 57TH ST., NEW YORK.





